

Historic, archived document

Do not assume content reflects current
scientific knowledge, policies, or practices.

1929 84250
10.10.29
Extension Service Circular 107

June, 1929

LIBRARY OF THE
OFFICE OF EXPERIMENT STATIONS
JUL 20 1929
EXPERIMENT STATION FILE

CLUB DATA
FROM EXTENSION STUDIES

M. C. Wilson



UNITED STATES DEPARTMENT OF AGRICULTURE

Extension Service.....C.W. WARBURTON *Director*

Office of Cooperative Extension Work.....C.B. SMITH *Chief*

Washington, D. C.

1890

1890

1890



1890

JUL 20 1929

Extension Service Circular 107*

June, 1929.

EXPERIMENT STATION FILE

CLUB DATA FROM EXTENSION STUDIES

M. C. Wilson, In Charge, Extension Studies
Office of Cooperative Extension Work

	Contents Page	Page
Size of the club problem.....	1	Influence of junior result
Number reached by club work.....	2	demonstrations on farm and
Length of time in club work		home practices..... 5
and number of projects		Volume of club work as affect-
carried on..... 3		ing quality..... 7
School attendance and club		Age of club members as related to
work..... 4		adoption of practices by adults 9
		Summary..... 11

The extension studies, which have been conducted in cooperation with the extension services of 16 States,* * furnish considerable data on many problems connected with boys' and girls' club work.

Size of the Club Problem

Children under 21 years of age living at home were found on 68 per cent of the nearly 11,000 farms and homes concerning which comparable information was obtained. (Table 1.) Forty-seven per cent of all the homes studied had children between the ages of 10 to 20 years inclusive. The total number of children of all ages in these families was 22,196, and of this number 11,271 or 51 per cent were of suitable age to participate in 4-H^{club} activities. Another way of stating the size of the club problem is to say that there was an average of approximately 1 child of club age for every farm located in the areas studied. As the 43 different areas studied are thought to be representative, the standard of 1 boy or girl of club age per farm may be reasonably accurate for measuring the club problem in a county insofar as the boys and girls of the open country are concerned.

*A revision of Extension Service Circular 4, Club Data from Extension Studies, issued in April, 1925.

*Iowa, New York, Colorado, California, Massachusetts, New Jersey, Georgia, Wisconsin, Arkansas, South Dakota, Illinois, Pennsylvania, Minnesota, Kansas, Michigan, and Rhode Island.

DISTRIBUTION: One copy of this circular has been sent to each State extension director, library of State agricultural college, and library of experiment station.

1940

1941

1942

1943

1944

1945

1946

1947

1948

1949

1950

1951

1952

1953

1954

1955

1956

1957

1958

1959

1960

1961

1962

1963

1964

Table 1. - Size of the Club Problem - 16 States

Item	Number	Percentage
Farm and home records obtained.....	10,973	100
Families with children.....	7,521	68
Number of children under 21 years on farms..	22,196	100
Families with children of club age (10 to 20 years).....	5,167	47
Farms and homes represented in club work....	1,985	18
Children of club age (10 to 20 years).....	11,271	51

Number Reached by Club Work

The membership in 4-H clubs at the time the data were collected was 12.5 per cent of the children of club age. The total number of boys and girls on the farms who had ever engaged in club work was equal to 28 per cent of the children of club age. This indicates that approximately one out of every four farm boys and girls is being reached through club work at some time before they become 21 years of age. The percentages of boys and girls of club age in club work from these individual States are given in Table 2. The highest percentage of present club members was found in State A, and the highest percentage of boys and girls of club age ever in club work in State F.

Table 2. - Percentage of Boys and Girls
in Club Work

State Area	Percentage boys and girls 10 to 20 years ever in club work	Percentage boys and girls 10 to 20 years now in club work
A.....	38.5	22.6
C.....	21.0	6.5
D.....	38.0	16.9
E.....	20.0*	10.0*
F.....	54.4	22.4
G.....	24.7	6.9
H.....	40.1	14.8
I.....	16.7	6.5
J.....	14.1	4.6
K.....	36.5	17.7
L.....	22.5	9.4
M.....	30.1	19.5
N.....	25.7	15.1
O.....	35.4	13.5
P.....	13.8	9.4
16 States**.....	28.1	12.5

*Approximate.

**State B is included in the total, but is not listed above.

THE HISTORY OF THE

REIGN OF THE EMPEROR OF THE ROMAN EMPIRE

FROM THE DEATH OF THE EMPEROR
THEODOSIUS THE FIRST TO THE
DEATH OF THE EMPEROR
VALENTIENUS THE SECOND
BY
JOHN BISHOP

THE HISTORY OF THE

REIGN OF THE EMPEROR OF THE ROMAN EMPIRE
FROM THE DEATH OF THE EMPEROR
THEODOSIUS THE FIRST TO THE
DEATH OF THE EMPEROR
VALENTIENUS THE SECOND
BY
JOHN BISHOP

THE HISTORY OF THE

REIGN OF THE EMPEROR OF THE ROMAN EMPIRE
FROM THE DEATH OF THE EMPEROR
THEODOSIUS THE FIRST TO THE
DEATH OF THE EMPEROR
VALENTIENUS THE SECOND
BY
JOHN BISHOP

THE HISTORY OF THE

THE HISTORY OF THE

The age distribution of 7,648 boys and girls of club age found on farms in 10 State areas is given in Table 3. The number of boys and girls becoming 10 years of age each year is equal to about 11 per cent of the total number of club age. In a county with 2,500 farms there are about 275 new farm boys and girls becoming eligible for club work each year. The percentage of boys and girls in the various age groups in club work at the time the data were collected is highest for the 14-year age group and decreases rapidly with the older age groups - particularly after 16 years. 4-H club work as it is being conducted does not seem to appeal so strongly to the young people older than 16 years of age as to the boys and girls under 16 years of age. Other interests competing for the time of young people are also much more important in the older age groups.

Table 3. - Percentage of Children of Various Ages Who had Been or Were in 4-H Club Work at the Time the Data Were Obtained.

7,846 Farms - 10 States

Item	Years of age												Total
	10	11	12	13	14	15	16	17	18	19	20	(10-20)	
Number of children on farms.....	836	775	916	803	795	729	762	626	636	445	325	7648	
Percentage of children on farms (10-20 years)...	10.9	10.1	12.0	10.5	10.4	9.5	10.0	8.2	8.3	5.8	4.3	100	
Number of present and past club members.....	84	135	223	244	267	244	220	193	150	107	61	1928	
Percentage of children on farms who have been or are in club work.....	10.0	17.4	24.3	30.4	33.6	33.5	28.9	30.8	23.6	24.0	18.8	25.2	
Number of present club members.....	65	97	143	128	145	109	92	55	37	20	8	899	
Percentage of children on farms who are now in club work.....	7.8	12.5	15.6	15.9	18.2	15.0	12.1	8.8	5.8	4.5	2.5	11.8	

Length of Time in Club Work and Number of Projects Carried On

The average length of time that all club members in the 16 States had been in club work was 1.8 years (Table 4), and the number of projects undertaken during this time averaged 1.2. The longest period club members remained in club work on the average was 2.2 years. The average number of projects carried on was highest, 1.6, in States F and P, and lowest, 1.0, in State G. The lowest average age of club members in a State area was slightly more than 12 years and the highest average age nearly 15 years.

Table 4. -- Age of club members, length of time in club work,
and number of projects carried on.

State Area	: Average age of : present : club members	: Average years : in : club work	: Projects under- : taken per : club member
A.....	14.4	1.8	1.3
C.....	12.9	1.9	1.2
D.....	14.5	2.0	1.2
E.....	14.2	1.7	1.2
F.....	12.6	1.5	1.6
G.....	12.9	2.2	1.0
H.....	12.2	1.4	1.2
I.....	14.2	1.4	1.2
J.....	14.1	1.8	1.1
K.....	14.5	2.2	1.2
L.....	12.3	1.8	1.2
M.....	13.4	1.8	1.4
N.....	13.5	1.5	1.1
O.....	13.0	1.9	1.2
P.....	13.6	1.6	1.6
16 States*	13.6	1.8	1.2

* State B is included in total but is not listed above.

School Attendance and Club Work

In 11 of the States in which extension studies have been made, information was obtained regarding the school attendance of farm boys and girls between the ages of 10 and 20 years inclusive. (Table 5.) Seventy-seven per cent of the boys and girls between these ages living on farms were found to be in school. The variation in the 11 States was from 66 per cent in J, to 84 per cent in A. Of those participating in club work at the time of the field work nearly 7 per cent were not attending school. The lowest percentage of club members not in school was 1 per cent in L, and the highest 19 per cent in State M. Evidently club work is more closely associated with the public-school organization in A, D, F, L and O than in the other States.

THE
LIBRARY
OF THE
MUSEUM OF
COMPARATIVE ZOOLOGY
AT HARVARD UNIVERSITY
CAMBRIDGE, MASS.

1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

THE
LIBRARY
OF THE
MUSEUM OF
COMPARATIVE ZOOLOGY
AT HARVARD UNIVERSITY
CAMBRIDGE, MASS.

Table 5. - School Attendance and Club Work

State Area	: Percentage : children 10 to : 20 years of age : in school	: : Percentage of present : club members not in : school	: Percentage of : out-of-school boys : and girls of : club age in : club work
A.....	83.9	7.5	10.5
D.....	81.1	1.4	1.2
F.....	79.8	2.0	2.2
G.....	--	14.7	--
I.....	76.5	11.8	3.3
J.....	66.1	16.7	2.2
K.....	75.1	13.0	9.2
L.....	77.4	1.1	.5
M.....	72.6	18.8	13.4
N.....	75.2	5.8	3.5
O.....	75.2	1.5	1.0
P.....	73.2	9.4	3.3
Total.....	11 States. 77.3	12 States.. 6.7	11 States.. 4.7

Looking at the matter from the point of view of the proportion of the boys and girls 10 to 20 years of age out of school who are reached by club work, one finds that, at the time the field data were collected in the various States, more than 4 per cent of the out-of-school boys and girls of club age were enrolled in club work. (Table 5.) This is about one-third the percentage of all boys and girls of club age who were engaged in club work at that time. The highest percentage of out-of-school boys and girls reached by 4-H club work was 10.5 in A, and the lowest percentage .5 in L.

Considering the fact that in many cases the reasons why so many boys and girls of club age are out of school also preclude their participation in club projects, it is probable that the present ratio of club members out of school to club members in school is about as it should be.

Influence of Junior Result Demonstrations on Farm and Home Practices

An important objective of 4-H club work is the demonstration of improved farm and home practices through the home project work of the club members. In Table 6 a comparison is made between the number of better practices reported adopted on the farms and in the homes studied due to the influence of junior result demonstrations. For the combined areas studied in the 16 States, junior result demonstrations were reported to have influenced the adoption of an average of 3-1/2 practices for every 10 club members. The variation for the 16 States is from 1 practice for 50 club members in P, to 1 practice for every 2 club members in L.

1. The first part of the report
describes the general situation
of the country and the
main problems which
are facing it.

The second part of the report
describes the results of the
survey which was carried out
in the different parts of the
country. The survey was
carried out in the following
order: first in the north, then
in the south, and finally in the
central part of the country.

The third part of the report
describes the results of the
survey which was carried out
in the different parts of the
country.

The fourth part of the report
describes the results of the
survey which was carried out
in the different parts of the
country.

The fifth part of the report
describes the results of the
survey which was carried out
in the different parts of the
country.

Table 6. - Relationship of Number of Club Members
to the Number of Practices Adopted Due to
Junior Result Demonstrations.

State Area	: Club : members	: Practices : adopted due to : junior result : demonstrations:	: Practices : adopted per : club member
A.....	342	180	.52
C.....	188	70	.37
D.....	489	236	.48
E.....	121	14	.11
F.....	371	148	.40
G.....	121	56	.46
H.....	344	115	.33
I.....	87	16	.18
J.....	56	20	.36
K.....	237	31	.13
L.....	212	111	.52
M.....	156	25	.16
N.....	146	23	.16
O.....	175	59	.34
P.....	47	1	.02
Total 16 States*.....	3,164	1,118	.35

*State B not listed above is included in the total.

In the detailed study of club work in the Massachusetts area, which is somewhat above the average for the 16 States in the number of practices adopted per club member due to junior result demonstrations, it was learned that junior result demonstrations influenced the adoption of practically 70 per cent of all the better farm and home practices taken up as the result of all phases of club work. (Table 7.) It would seem, therefore, that club work is relatively a much less potent influence in bringing about the acceptance of improved farm and home practices by adults than many extension workers have thought, but in the aggregate does have a substantial influence in changing farm and home practices.

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion. The number of people aged 65 and over is expected to increase from 200 million to 400 million. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion. The number of people aged 15 and over is expected to increase from 3.5 billion to 4.5 billion.

4. [Download the source code](#) (1.5 MB)

1. *Chlorophyll a* (Chl *a*) and *Chlorophyll b* (Chl *b*) were determined by the method of Arar and Collins (1971). The concentration of Chl *a* and Chl *b* was expressed as $\mu\text{g mL}^{-1}$ of the sample.

Sl. No.	Particulars	Debit	Credit
1	By Balance b/d		100.00
2	To Cash	50.00	
3	To Bank	30.00	
4	To Debtors	20.00	
5	To Creditors		10.00
6	To Income		5.00
7	To Expenses		2.00
8	To Profit		3.00
9	To Balance c/d		10.00
10	Total	100.00	100.00

[illegible]

Table 7. - Methods which influenced changes in practices
(Massachusetts)

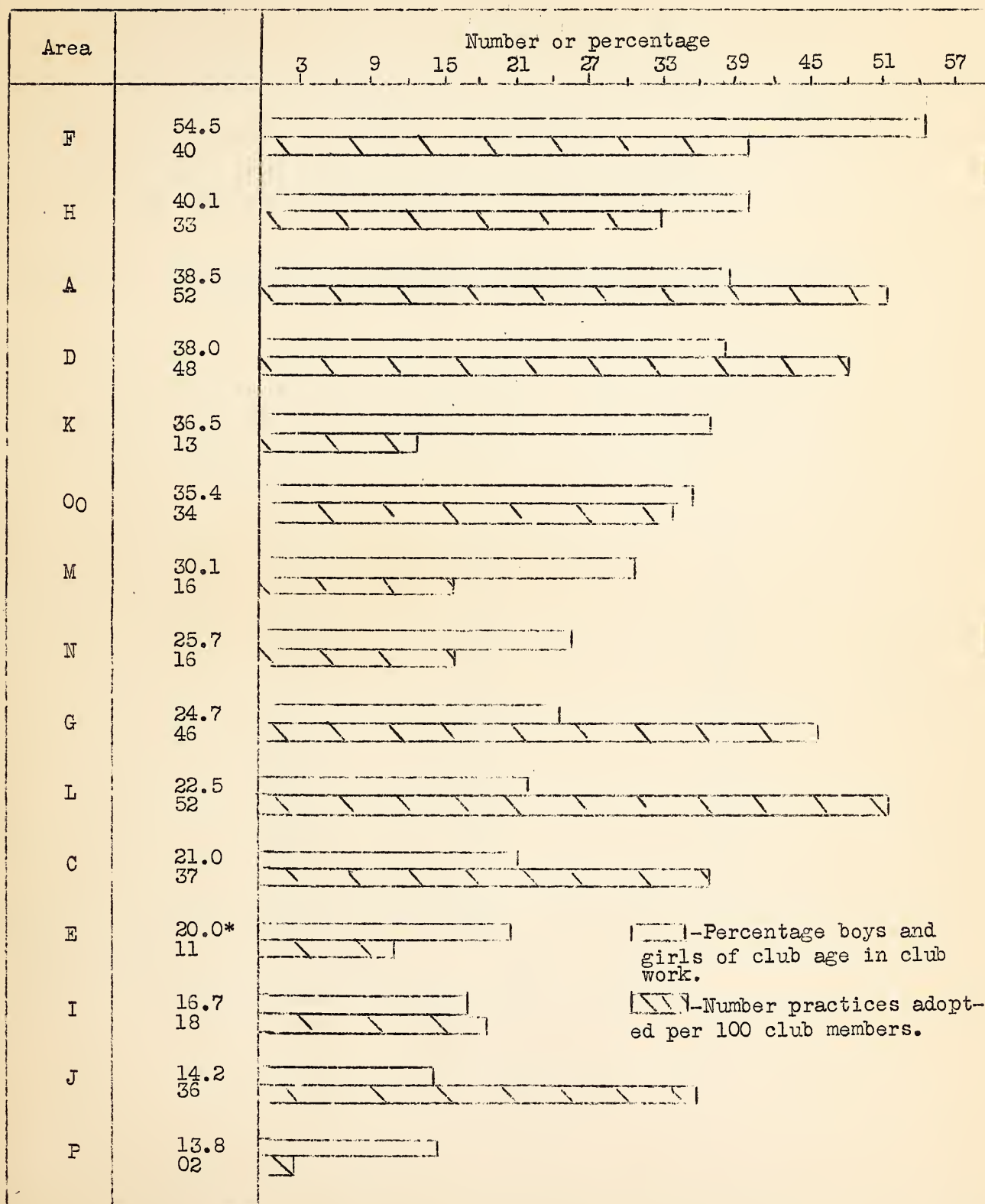
Item	: Number :	Percentage
Practices changed as a result of club work.....	214	100.0
Changed practices due to influence of following methods employed in junior extension work:		
Result demonstrations.....	148	69.1
Bulletins.....	43	20.1
Method demonstrations.....	27	12.6
Meetings.....	22	10.3
Farm and home visits.....	8	3.7
Exhibits.....	6	2.8
Indirect.....	5	2.3
Correspondence.....	3	1.4
Circular letter.....	2	.9
News stories.....	2	.9

Volume of Club Work as Affecting Quality

Volume of club work may be expressed readily by the number or percentage of boys and girls enrolled. Quality of club work is much more difficult of measurement. In fact, it is impossible to measure, according to any standards we now have, the influence of junior extension work upon the individual club members involved and upon the farm and home practices of succeeding generations. The more or less immediate influence of the home project work of club members upon the practices of adults can be approximated, however. The relationship between the percentage of boys and girls 10 to 20 years of age who have participated in club work, and the average number of improved practices adopted per club member due to junior result demonstrations, is brought out in Fig. 1. It will be noted that a large number of practices adopted per club member was associated with large enrollment about as frequently as with small enrollment. Other factors than size of enrollment would seem to determine quality of work done.

Reducing the volume of club work in order to improve the quality is sometimes suggested. This theory does not seem to work out in actual practice, however, for the number of practices adopted per club member in the States with large enrollments is on the average as large or larger than the number of practices adopted per club member in the States with small enrollments.

Fig. 1. - Relationship of Club Membership and Adoption of Practices Due to Junior Result Demonstrations



*Approximate

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) under the conditions (2). It is shown that the system (1) has a solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

2. In the second part of the paper the question of the uniqueness of the solution of the system (1) is considered. It is shown that the system (1) has a unique solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

3. In the third part of the paper the question of the stability of the solution of the system (1) is considered. It is shown that the system (1) has a stable solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

4. In the fourth part of the paper the question of the asymptotic stability of the solution of the system (1) is considered. It is shown that the system (1) has an asymptotically stable solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

5. In the fifth part of the paper the question of the boundedness of the solution of the system (1) is considered. It is shown that the system (1) has a bounded solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) under the conditions (2). It is shown that the system (1) has a solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

2. In the second part of the paper the question of the uniqueness of the solution of the system (1) is considered. It is shown that the system (1) has a unique solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

3. In the third part of the paper the question of the stability of the solution of the system (1) is considered. It is shown that the system (1) has a stable solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

4. In the fourth part of the paper the question of the asymptotic stability of the solution of the system (1) is considered. It is shown that the system (1) has an asymptotically stable solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

5. In the fifth part of the paper the question of the boundedness of the solution of the system (1) is considered. It is shown that the system (1) has a bounded solution if and only if the conditions (2) are satisfied. The proof is given in the Appendix.

Age of Club Members as Related to Adoption of Practices by Adults.

The average age of club members in the 16 States varied from slightly more than 12 years to slightly less than 15 years. (Table 8.) The question is sometimes raised that the demonstrations conducted by the younger age groups cannot be expected to have so great an influence upon the practices of adults as the demonstrations carried on by the older boys and girls. The relationship of these 2 factors is brought out in Fig. 2. High number of practices adopted per club member is associated with low average age in more instances than is it associated with high average age, indicating that age of club members as a factor in influencing the adoption of improved practices by adults is largely overshadowed by other conditions.

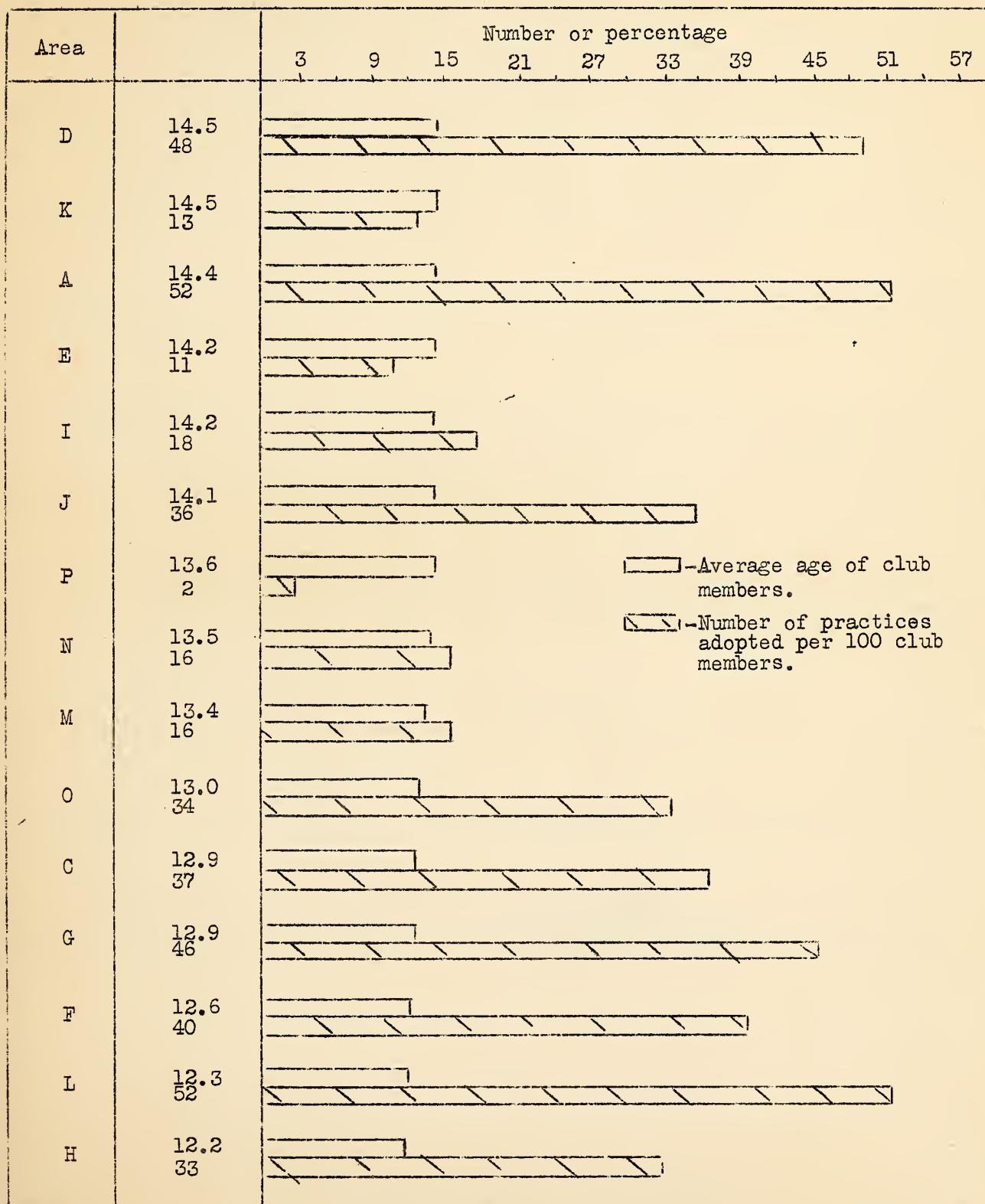
Table 8. - Percentage of boys and girls (10 to 20 years) in club work, and practices adopted per club member (16 States)

State Area	:Percentage boys :Average age :Practices adopted per club :and girls 10 to :of present :member due to junior :20 years over in:club members :result demonstrations :club work :
A.....	: 38.5 : 14.4 : .52
C.....	: 21.0 : 12.9 : .37
D.....	: 38.0 : 14.5 : .48
E.....	: 20.0* : 14.2 : .11
F.....	: 54.4 : 12.6 : .40
G.....	: 24.7 : 12.9 : .46
H.....	: 40.1 : 12.2 : .33
I.....	: 16.7 : 14.2 : .18
J.....	: 14.2 : 14.1 : .36
K.....	: 36.5 : 14.5 : .13
L.....	: 22.5 : 12.3 : .52
M.....	: 30.1 : 13.4 : .16
N.....	: 25.7 : 13.5 : .16
O.....	: 35.4 : 13.0 : .34
P.....	: 13.8 : 13.6 : .02
Total 16 States**	: 28.1 : 13.6 : .35

* Approximate.

** State B not listed above is included in the total.

Fig. 2 - Relationship of Age of Club Members and Adoption of Practices
Due to Junior Result Demonstrations



1. *Phragmites australis* (Cav.) Trin. ex Steud.

S U M M A R Y

Based upon the information derived from the study of 10,973 farms and homes in 16 States, it appears that:

There is on the average approximately 1 boy or girl 10 to 20 years of age, inclusive, for every farm and farm home. The number of new farm boys and girls becoming eligible for club work each year is equal to approximately 11 per cent of the farms in a county.

One boy or girl out of every 8 of club age on farms was in club work at the time the field data were collected. Slightly more than 1 out of 4 either were or had been in club work.

The average age of club members at the time the studies were made was 13.6 years. Considering both present and past club members the average boy or girl remained in club work 1.8 years and participated in 1.2 different projects.

Seventy-seven per cent of all children 10 to 20 years of age on the farms studied in 11 States were in school. Of those enrolled in club work at the time of the study, an average of 6.7 per cent were not in school. Of those not in school at the time the field information was collected, 4.7 per cent were then in club work.

The home project work of the club members (junior result demonstration) was reported as having influenced the adoption by adults of 3-1/2 improved practices for every 10 club members. Extension leaders may well devote attention to devising ways and means of making the demonstrational side of club work more effective.

Generally speaking, the increased volume of club work does not lessen the quality as measured by the number of improved practices adopted by adults due to junior result demonstrations.

The number of improved practices adopted due to the influence of demonstrations by club members does not seem to increase with increased age of club members.

Enrolling more boys and girls and older boys and girls and keeping them in club work longer will to a large extent automatically meet the problem of reaching more of the boys and girls outside school classrooms through 4-H club work.



